

## IN THE CLAIMS:

The following is a complete listing of the claims. This listing replaces all earlier versions and listings of the claims.

Claims 1-9 (canceled)

Claim 10 (currently amended): An optical communication system for transmitting a soliton or soliton-like pulse, comprising a ~~multiplicity~~ plurality of dispersion elements, the plurality of elements including at least a fiber lengths and a discrete dispersion compensator, the fiber length and discrete dispersion compensator having different of opposite sign dispersions, ~~concatenated together, for management of dispersion;~~  
—— ~~the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the nonlinear length of the system; wherein the path average dispersion of the multiplicity plurality of unit cells dispersion elements is zero or anomalous; and wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion for the unit cell which is close to zero, in order to permit propagation of a pulse wherein the shape of the pulse alternately expands and compresses as it propagates through a unit cell.~~

Claim 11 (currently amended): An optical communication system for transmitting a soliton or soliton-like pulse, comprising a ~~multiplicity~~ plurality of fiber lengths discrete dispersion compensators, at least two of which have of opposite sign different dispersions, ~~concatenated together, for management of dispersion;~~  
—— ~~the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the nonlinear length of the system; wherein the path average dispersion of the~~

~~multiplicity plurality of unit cells~~ discrete dispersion compensators is zero or anomalous; and wherein the profile of a pulse at the beginning of a unit cell is substantially Gaussian in shape.

Claims 12-42 (canceled)

Claim 43 (currently amended): An optical communication system comprising a plurality of sections ~~multiplicity of unit cells~~, each ~~cell~~ section including at least two ~~lengths of optical fiber~~ dispersion elements that have dispersions of opposite sign, wherein the ~~multiplicity of unit cells~~ plurality of sections permits propagation of a stable or quasi-stable optical pulse, and wherein the optical pulse has a time-bandwidth product greater than a time-bandwidth product of an optical pulse that is ~~substantially~~ Gaussian in shape.

Claim 44 (currently amended): The optical communication system of claim 43, wherein the optical pulse alternately expands and compresses as it propagates through the sections ~~unit cells~~.

Claim 45 (currently amended): The optical communication system of claim 43, wherein the path average dispersion of the ~~multiplicity of unit cells~~ plurality of sections is zero or anomalous.

Claim 46 (canceled)

Claim 47 (currently amended): The optical communication system of claim 43, wherein the difference between the dispersion magnitudes of the ~~optical fiber lengths~~ two dispersion elements is less than 12 ps<sup>2</sup>/Km.

Claim 48 (currently amended): The optical communication system of claim 47, wherein the difference between the dispersion magnitudes of the ~~optical fiber lengths~~ two dispersion elements is less than  $4 \text{ ps}^2/\text{Km}$ .

Claim 49 (currently amended): The optical communication system of claim 48, wherein the difference between the dispersion magnitudes of the ~~optical fiber lengths~~ two dispersion elements is less than  $0.1 \text{ ps}^2/\text{Km}$ .

Claim 50 (new): The optical communication system of claim 43, wherein the two dispersion elements of a section comprise an optical fiber length and a discrete dispersion compensator.

Claim 51 (new): The optical communication system of claim 43, wherein the two dispersion elements of a section comprise discrete dispersion compensators.

Claim 52 (new): The optical communication system of claim 10, wherein the discrete dispersion compensator is fabricated from a highly dispersive material.

Claim 53 (new): The optical communication system of claim 11, wherein at least one of the discrete dispersion compensators is fabricated from a highly dispersive material.

Claim 54 (new): The optical communication system of claim 10, wherein the soliton or soliton-like pulse has a time-bandwidth product greater than the time-bandwidth product of a Gaussian-shaped pulse.

Claim 55 (new): The optical communication system of claim 11, wherein the soliton or soliton-like pulse has a time-bandwidth product greater than the time-bandwidth product of a Gaussian-shaped pulse.

Claim 56 (new): A method of optical communication comprising:

generating a plurality of optical pulses; and

launching the plurality of optical pulses through an optical communication system comprising a plurality of dispersion elements, the plurality of elements including at least a fiber length and a discrete dispersion compensator, the fiber length and the discrete dispersion compensator having different dispersions, wherein the path average dispersion of the plurality of dispersion elements is zero or anomalous, such that the optical pulses are transmitted as soliton or soliton-like pulses.

Claim 57 (new): A method of optical communication comprising:

generating a plurality of optical pulses; and

launching the plurality of optical pulses through an optical communication system comprising a plurality of discrete dispersion compensators, at least two of which have different dispersions, wherein the path average dispersion of the plurality of discrete dispersion compensators is zero or anomalous, such that the optical pulses are transmitted as soliton or soliton-like pulses.

Claim 58 (new): A method of optical communication comprising:

generating a plurality of optical pulses; and

launching the plurality of optical pulses through an optical communication system comprising a plurality of sections, each section including at least two dispersion elements that have dispersions of opposite sign, wherein the plurality of sections permits propagation of corresponding stable or quasi-stable optical pulses, and wherein the stable or quasi-stable optical pulses have a time-bandwidth product greater than a time-bandwidth product of optical pulses that are Gaussian in shape.